Analyte	PQLs, mg/kg	Frequency of Detection	Maximum Concentration, mg/kg	Method A Concentration, mg/kg	Screening Result
TPH-gasoline	6	0.51	3340	30	**indicator**
TPH-diesel	30	0.11	6500	2000	**indicator**
Benzene	0.00008	0.15	9.8	0.03	**indicator**
Toluene	0.00015	0.21	110	7	**indicator**
Ethyl benzene	0.00015	0.38	30	6	**indicator**
Xylene	0.00015	0.36	190	9	**indicator**
Lead	20	0.05	140	250	below cleanup level

PQL - practical quantitation limit for appropriate method

mg/kg - milligrams per kilogram

Table 1. Indicator Substance Screening, Soil

Analyte	PQLs, µg/L	Frequency of Detection	Maximum Concentration, µg/L	Method A Concentration, µg/L		Screening Result
				Groundwater	Surface Water[1]	
TPH-gasoline	0.05	0.80	110,000	**800**		**indicator**
TPH-diesel	0.25	0.34	1,900,000	**500**		**indicator**
Benzene	0.5	0.76	2400	**5**	71	**indicator**
Toluene	1.0	0.73	2800	**1000**	200,000	**indicator**
Ethyl benzene	1.0	0.76	200,000	**700**	29,000	**indicator**
Xylene	1.0	0.78	17,500	**1000**		**indicator**
Lead	0.002	0.11	3	15	**2.52**[2]	below cleanup level[3]

PQL - practical quantitation limit for appropriate method

µg/L - micrograms per liter

bold - selected cleanup level

[1] - surface water levels based on National Toxics Rule values for Human Health for Consumption of Organism Only

[2] - concentration dependant on hardness (100 mg/L estimated here)

[3] - maximum concentration does not significantly exceed Method A cleanup level

Table 2. Indicator Substance Screening, Groundwater

5.2 CLEANUP ACTION ALTERNATIVES

Cleanup alternatives to meet these remedial action objectives are evaluated as part of the RI/FS for the site. The feasibility study evaluated four options for soil (excavation, onsite treatment, containment, and offsite disposal) and two options for groundwater (interception and treatment). These options were combined to form four alternatives for addressing all contaminated media at the site. The following four alternatives are as proposed by Lincoln County.

5.2.1 Alternative 1: No Action

The no action alternative is a baseline to address the criteria for comparison to action alternatives. This represents the site with no active measures towards site cleanup. This alternative would include fencing around all properties, institutional controls including deed restrictions, and natural attenuation. Fencing and signs on properties would need to be continuously maintained, and groundwater monitoring would take place to assess the effectiveness of natural attenuation.

5.2.2 Alternative 2: Source Removal with Natural Attenuation

This alternative would primarily address soil with no engineered treatment of groundwater. Contaminated soil in the source areas would be excavated and backfilled with clean material, while groundwater would only be addressed through natural attenuation. Excavated soil would either be transported to a permitted disposal facility, or would be transported to an appropriate off-site location to be land treated. Land treatment involves the addition of oxygen, nutrients, and moisture and manually aerating to remove volatile contaminants. The baseline no action alternative measures would also be included, such as fencing, institutional controls, and groundwater monitoring.

5.2.3 Alternative 3: Source Removal with Engineering Controls

Groundwater, along with soil, would be more actively addressed through this alternative. Contaminated soil in source areas would be excavated and backfilled with clean material, as in alternative two. In addition, measures would be taken to prevent the infiltration of water through soils and thereby minimize the leaching and mobilization of contaminants into groundwater. These measures would include an impermeable barrier over areas where soil was excavated, with a means to control and divert stormwater. A phytoremediation barrier would be planted along the north and west sides of the site to assist the natural attenuation processes in groundwater that would be considered a component of the alternative. Fencing, institutional controls, and groundwater monitoring would still be a component of this alternative.

5.2.4 Alternative 4: Source Removal with Engineering Controls and Enhanced Bioremediation

This alternative addresses both contaminated media at the site. Contaminated soil in source areas would be excavated and backfilled with clean material as in the previous alternatives. However, in this alternative the clean backfill is mixed with an oxygen-releasing compound to enhance the biological degradation of the contaminants. Installation of an impermeable barrier

over the surface and a phytoremediation barrier would also be included, as would institutional controls and groundwater monitoring.

5.3 REGULATORY REQUIREMENTS

The MTCA Cleanup Regulation sets forth the minimum requirements and procedures for selecting a cleanup action. A cleanup action must meet each of the minimum requirements specified in WAC 173-340-360(2), including certain threshold and other requirements. These requirements are outlined below.

5.3.1 Threshold Requirements

WAC 173-340-360(2)(a) requires that the cleanup action shall:

- Protect human health and the environment;
- Comply with cleanup standards (see Section 4.0);
- Comply with applicable state and federal laws (see Section 5.3.5); and
- Provide for compliance monitoring.

5.3.2 Other Requirements

In addition, WAC 173-340-360(2)(b) states that the cleanup action shall:

- Use permanent solutions to the maximum extent practicable;
- Provide for a reasonable restoration time frame; and
- Consider public concerns

WAC 173-340-360(3) describes the specific requirements and procedures for determining whether a cleanup action uses permanent solutions to the maximum extent practicable. A permanent solution is defined as one where cleanup levels can be met without further action being required at the Site other than the disposal of residue from the treatment of hazardous substances. To determine whether a cleanup action uses permanent solutions to the maximum extent practicable, a disproportionate cost analysis is conducted. This analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors, including:

- Protectiveness;
- Permanent reduction of toxicity, mobility and volume;
- Cost;
- Long-term effectiveness;
- Short-term effectiveness;
- Implementability; and
- Consideration of public concerns.

The comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment.

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame.

5.3.3 Groundwater Cleanup Action Requirements

At sites with contaminated groundwater, WAC 173-340-360(2)(c) requires that the cleanup action meet certain additional requirements. For nonpermanent groundwater cleanup actions, the regulation requires that the following two requirements be met:

1) Treatment or removal of the source of the release shall be conducted for liquid wastes, areas of high contamination, areas of highly mobile contaminants, or substances that can't be reliably contained; and
2) Groundwater containment (such as barriers) or control (such as pumping) shall be implemented to the maximum extent practicable.

5.3.4 Cleanup Action Expectations

WAC 173-340-370 sets forth the following expectations for the development of cleanup action alternatives and the selection of cleanup actions. These expectations represent the types of cleanup actions Ecology considers likely results of the remedy selection process; however, Ecology recognizes that there may be some sites where cleanup actions conforming to these expectations are not appropriate.

- Treatment technologies will be emphasized at sites with liquid wastes, areas with high concentrations of hazardous substances, or with highly mobile and/or highly treatable contaminants;
- To minimize the need for long-term management of contaminated materials, hazardous substances will be destroyed, detoxified, and/or removed to concentrations below cleanup levels throughout sites with small volumes of hazardous substances;
- Engineering controls, such as containment, may need to be used at sites with large volumes of materials with relatively low levels of hazardous substances where treatment is impracticable;
- To minimize the potential for migration of hazardous substances, active measures will be taken to prevent precipitation and runoff from coming into contact with contaminated soils or waste materials;
- When hazardous substances remain on-site at concentrations which exceed cleanup levels, they will be consolidated to the maximum extent practicable where needed to minimize the potential for direct contact and migration of hazardous substances;
- For sites adjacent to surface water, active measures will be taken to prevent/minimize releases to that water; dilution will not be the sole method for demonstrating compliance;
- Natural attenuation of hazardous substances may be appropriate at sites under certain specified conditions (see WAC 173-340-370(7)); and
- Cleanup actions will not result in a significantly greater overall threat to human health and the environment than other alternatives.

5.3.5 Applicable, Relevant, and Appropriate, and Local Requirements

WAC 173-340-710(1) requires that all cleanup actions comply with all applicable state and federal law. It further states that the term "applicable state and federal laws" shall include legally applicable requirements and those requirements that the department determines "...are relevant and appropriate requirements." This section discusses applicable state and federal law, relevant and appropriate requirements, and local permitting requirements which were considered and were of primary importance in selecting cleanup requirements. If other requirements are identified at a later date, they will be applied to the cleanup actions at that time.

MTCA provides an exemption from the procedural requirements of several state laws and from any laws authorizing local government permits or approvals for remedial actions conducted under a consent decree, order, or agreed order. [RCW 70.105D.090] However, the substantive requirements of a required permit must be met. The procedural requirements of the following state laws are exempted:

- Ch. 70.94 RCW, Washington Clean Air Act;
- Ch. 70.95 RCW, Solid Waste Management, Reduction, and Recycling;
- Ch. 70.105 RCW, Hazardous Waste Management;
- Ch. 75.20 RCW, Construction Projects in State Waters;
- Ch. 90.48 RCW, Water Pollution Control; and
- Ch. 90.58 RCW, Shoreline Management Act of 1971.

WAC 173-340-710(4) sets forth the criteria that Ecology evaluates when determining whether certain requirements are relevant and appropriate for a cleanup action. Table 3 lists the state and federal laws that contain the applicable or relevant and appropriate requirements that apply to the cleanup action at the South Wilbur Petroleum Contamination Site. Local laws, which may be more stringent than specified state and federal laws, will govern where applicable.

5.3.6 Terrestrial Ecological Evaluation

As soil is an affected media at the site, the cleanup action must go through a terrestrial ecological evaluation. The terrestrial ecological evaluation process set forth in MTCA is used to determine whether the cleanup action is protective of the environment. The requirements and procedures for conducting a terrestrial ecological evaluation are set forth in WAC 173-340-7490 through WAC 173-340-7494. If a site meets one of the following four criteria, it may be excluded from evaluation:

- All contaminated soil is or will be located below the point of compliance;
- All contaminated soil is or will be covered by buildings, paved surfaces, or other physical barriers;
- There is less than 1.5 acres of undeveloped land on the site or within 500 feet of the site (1/4 acre if specific contaminants are present); or
- Concentrations of hazardous substances in soil do not exceed natural background levels.

At this site, all contaminated soil in source areas will be excavated unless it is under a building. Therefore, the first exclusion will be met and no terrestrial ecological evaluation will be done.

Cleanup Action Implementation	
Ch. 18.104 RCW; Ch. 173-160 WAC	Water Well Construction; Minimum Standards for Construction and Maintenance of Water Wells
Ch. 173-162 WAC	Rules and Regulations Governing the Licensing of Well Contractors and Operators
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
Ch. 43.21C RCW; Ch. 197-11 WAC	State Environmental Policy Act; SEPA Rules
29 CFR 1910	Occupational Safety and Health Act
Groundwater and Surface Water	
42 USC 300	Safe Drinking Water Act
33 USC 1251; 40 CFR 131; Ch. 173-201A WAC	Clean Water Act of 1977; Water Quality Standards
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
40 CFR 141; 40 CFR 143	National Primary Drinking Water Standards; National Secondary Drinking Water Standards
Ch. 246-290 WAC	Department of Health Standards for Public Water Supplies
Ch. 173-154 WAC	Protection of Upper Aquifer Zones
Air	
42 USC 7401; 40 CFR 50	Clean Air Act of 1977; National Ambient Air Quality Standards
Ch. 70.94 RCW; Ch. 43.21A RCW; Ch. 173-400 WAC	Washington Clean Air Act; General Regulations for Air Pollution
Ch. 173-460 WAC	Controls for New Sources of Air Pollution
Ch. 173-470 WAC	Ambient Air Quality Standards for Particulate Matter
SCAPCA Regulation 1 Article VI	Control of Fugitive Emissions
Ch. 70.105D RCW; Ch. 173-340 WAC	Model Toxics Control Act; MTCA Cleanup Regulation
40 CFR Part 28	Criteria for Municipal Solid Waste Landfills

Table 3. Applicable or Relevant and Appropriate Requirements for the Cleanup Action

5.4 Evaluation of Cleanup Action Alternatives

The requirements and criteria outlined in Section 5.3 are used to conduct a comparative evaluation of alternatives one through four and to select a cleanup action from those alternatives. Table 4 provides a summary of the ranking of the alternatives against the various criteria.

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Threshold Criteria				
Protection of Health & Environment	No	Yes	Yes	Yes
Compliance with Cleanup Standards	No	Yes	Yes	Yes
Compliance with State & Federal Laws	No	Yes	Yes	Yes
Provision for Compliance Monitoring	No	Yes	Yes	Yes
Other Requirements				
Use of Permanent Solutions (disproportionate cost analysis)	Ranks 4	Ranks 3	Ranks 2	Ranks 1
Protectiveness	Low	Medium	Med-High	High
Permanent Reduction	Low	Medium	Medium	Medium
Cleanup Cost (estimated)	$365,000	$244,000	$289,000	$216,000
Long-term Effectiveness	Low	Medium	Medium	Medium
Short-term Effectiveness	High	Medium	Medium	Medium
Implementability	Yes	Yes	Yes	Yes
Consider Public Concerns	Yes	Yes	Yes	Yes
Provide Reasonable Time Frame	No	Yes	Yes	Yes
Consider Public Comments	Yes	Yes	Yes	Yes

Table 4. Evaluation of Cleanup Action Alternatives

5.4.1 Threshold Requirements

5.4.1.1 Protection of Human Health and the Environment

Alternative 1 provides no additional protection to human health and the environment, and allows for contaminated soil to remain on-site and continue leaching contaminants to groundwater. Alternative 2 would eliminate the risk due to contaminated soil by removing the direct contact pathway, the inhalation pathway, and the source for leaching to groundwater. Alternative 3 would provide additional protection from dermal and inhalation pathways, and would inhibit contaminant mobilization by reducing precipitation infiltration. Alternative 4 would provide the highest level of protection by enhancing the removal of residual groundwater contamination.

5.4.1.2 Compliance with Cleanup Standards

Alternative 1 would likely not meet cleanup standards in either soil or groundwater. Alternative 2 would involve the excavation of all soils exceeding cleanup levels, so soil levels will be met.

Groundwater levels would take time to achieve as no active measures would be implemented to remediate groundwater. Alternatives 3 and 4 would also achieve soil and groundwater cleanup levels as would alternative 2, but groundwater levels would be met in shorter time frames.

5.4.1.3 Compliance with State and Federal Laws

Alternative 1 would not be in compliance with state and federal laws because MTCA cleanup levels in groundwater and soil would continue to be exceeded. Alternatives 2, 3, and 4 would all achieve cleanup levels but over varying time frames.

5.4.1.4 Provision for Compliance Monitoring

Compliance monitoring would not take place under alternative 1. Alternatives 2, 3, and 4 would have compliance monitoring plans as part of the remedial action, and therefore would meet this criteria.

5.4.2 Other Requirements

5.4.2.1 Use of Permanent Solutions to the Maximum Extent Practicable

As discussed previously, to determine whether a cleanup action uses permanent solutions to the maximum extent practicable, the disproportionate cost analysis specified in the regulation is used. The analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors. The comparison of costs and benefits may be quantitative, but will often be qualitative and require the use of best professional judgment.

Costs are disproportionate to the benefits if the incremental costs are disproportionate to the incremental benefits. Based on the analysis described below, it has been determined that alternative 4 has the highest ranking for use of a permanent solution to the maximum extent practicable, followed by alternatives 2, 3, and 1. Alternatives 2 and 3 are relatively equal, and in such cases the alternative with the lower cost ranks higher. However, alternative 4 is higher in ranking than all the others.

- Protectiveness

Alternative 1 would not provide any protection to the public from existing soil and groundwater contamination, as it would not mitigate any exposure nor reduce contaminant levels to below cleanup levels. Alternatives 2, 3, and 4 would all be protective.

- Permanent Reduction of Toxicity, Mobility and Volume

Alternative 1 would not cause a permanent reduction of the toxicity, mobility, and volume of contaminants at the site. Alternatives 2, 3, and 4 would all involve the removal of all soil exceeding the cleanup level, and as such would result in a permanent solution. Contaminants in groundwater in these three alternatives would also be permanently reduced in volume, toxicity, and mobility.

- Cleanup Costs

Costs are approximated based on a fate and transport model that was run to estimate the remediation time for each alternative. Costs for each task included in each alternative are accumulated for the estimated length of time from the model.

Activities involved in alternative 1 include the installation of signs and fencing, and the continuation of groundwater monitoring to track contaminant levels. Modeling has shown that with no soil or groundwater treatment, it would take at least 27 years or more to achieve cleanup levels. Costs would exceed $480,000 to implement institutional controls and monitor the site.

Alternative 2 would include institutional controls, plus the additional cost of soil excavation and groundwater monitoring. Because the source would be removed during excavation, modeling has shown that the time to achieve cleanup levels would be approximately 9 years. Therefore, total costs are estimated at $244,000 which includes excavation and nine years of groundwater monitoring.

The same costs as alternative 2 would be included in alternative 3, with the addition of surface capping, surface water controls, and plants. With these additional measures, the total cost of alternative 3 is estimated to be $289,000.

Alternative 4 would include the same measures as alternative 3, but would involve the addition of the oxygen-releasing compound with the clean backfill. Modeling shows that this should reduce the time to achieve cleanup levels from 9 years to 3 years. So the additional cost of the oxygen-releasing compound should be offset by the reduction in monitoring costs. Estimated total costs for this alternative are $216,000.

- Long-Term Effectiveness

Alternative 1 would not be effective in the long-term as contaminated soil and groundwater would not be reduced in a reasonable time frame, and risks to human health and the environment would not be mitigated.

Alternatives 2, 3, and 4 would all provide a similar level of long-term effectiveness. The primary difference is in the time required to achieve cleanup levels, which would be least for alternative 4 and most with alternative 2.

- Short-Term Effectiveness

Alternative 1would be effective in the short-term because no additional risks would be introduced by its implementation. Alternatives 2 through 4 would introduce minor risks by the excavation and handling of contaminated soil. However, these risks would be effectively managed through standard operating procedures, minimizing handling of contaminated soil, and by keeping soil containerized during storage and transport.

- Implementability

All four alternatives are implementable at the Site. In the case of alternative 1, no action would be taken and institutional controls would be easily set up. For alternatives 2 through 4, actions that would be taken are excavation, backfilling, paving, fencing, and institutional controls, all of which are implementable based on site conditions. Paving and fencing would be limited by existing structures which would not be removed for this work.

- Consider Public Concerns

All four alternatives would provide opportunity for members of the public to review and comment on any proposals or plans.

5.4.2.2 Provide a Reasonable Restoration Time Frame

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame, as required under subsection (2)(b)(ii). The factors that are used to determine whether a cleanup action provides a reasonable restoration time frame are set forth in WAC 173-340-360(4)(b).

Based on fate and transport modeling, alternative 1 would require a minimum of 27 years to achieve cleanup levels in soil and groundwater. The assumptions are that the areas of soil contamination are not expected to increase, i.e., there will be no new releases, the hydraulic conditions will not significantly change, that there is currently an equilibrium between soil and groundwater contamination, and that active biological degradation is occurring. This would not be considered a reasonable restoration time frame.

Using the same assumptions as alternative 1, alternative 2 is expected to meet cleanup levels in soil and groundwater within 9 years. Alternative 3 would likely achieve cleanup levels in a slightly faster time frame, but because of the uncertainties in the fate and transport model, the restoration time frame is estimated to also be 9 years. These two alternatives are considered to have a reasonable restoration time frame.

Alternative 4 would enhance the restoration time frame due to the addition of oxygen to the groundwater system causing increased biological degradation of contaminants. It is expected to result in the achievement of cleanup levels within an estimated 3 years. This is considered to be a reasonable restoration time frame.

5.4.3 Groundwater Cleanup Action Requirements

Cleanup actions that address groundwater must meet the specific requirements described in Section 5.3.3 in addition to those listed above. At this Site, groundwater will be actively addressed through treatment with an oxygen-releasing compound. No other groundwater treatment technologies, such as pump and treat or air sparging, are considered feasible at this Site due to Site conditions. Once an oxygen-releasing compound is added to the soil, it is expected that no further action will be required to achieve cleanup levels in groundwater. Therefore, it is

Ecology's determination that this technology represents a permanent solution for groundwater cleanup, to the maximum extent practicable at the Site.

5.4.4 Terrestrial Ecological Evaluation

As noted above, alternatives 1 through 3 are considered protective of the environment. This determination is based on a terrestrial ecological evaluation conducted under the procedures specified in the regulation. Under the terrestrial ecological evaluation process, no further evaluation is required if Ecology determines that a site meets one of the four criteria listed in Section 5.3.6.

Under alternatives 2 through 4, contaminated soil would be excavated. Ecology has determined that since all soil contaminated with hazardous substances will be removed from the Site, the potential for exposure to plants or wildlife will be eliminated.

5.4.5 Cleanup Action Expectations

Specific expectations of cleanup levels are outlined in WAC 173-340-370 and are described in Section 5.3.4. Among those, alternatives 2 through 4 would address these expectations in the following manner:

- The use of an oxygen-releasing compound will provide treatment of discrete areas of hazardous substances.
- Hazardous substances will be removed through soil excavation.
- The installation of an asphalt cap and stormwater controls will prevent contact with contaminated materials.
- Treatment of contaminated groundwater with an oxygen-releasing compound and the installation of a phytoremediation barrier will minimize any discharge of contaminated groundwater to surface water in excess of cleanup levels.
- At this Site, there is evidence that natural attenuation is occurring, the source will be removed through soil excavation, compliance monitoring will be conducted to monitor the cleanup action, and the presence of residual contamination in groundwater should not present an unacceptable risk.

5.5 DECISION

Based on the analysis described above, alternative 4 has been selected as the proposed remedial action for the South Wilbur Petroleum Contamination Site. The alternative meets each of the minimum requirements for remedial actions.

Alternative 4 meets each of the threshold requirements. Furthermore, alternative 4 uses permanent solutions to the maximum extent practicable. The cost of alternative 4 is less than alternatives 1 through 3 and provides a higher level of protection for human health and the environment. Alternative 4 also provides a reasonable restoration time frame.

6.0 PROPOSED REMEDIAL ACTION

The proposed cleanup action for the Site includes the excavation of soils that are contaminated with petroleum hydrocarbons at concentrations above cleanup levels, and backfilling with clean soils and an oxygen-releasing compound. Excavated soils will either be transported to a permitted disposal facility, or will be transported to an appropriate off-site location to be land treated. Engineering controls in the form of asphalt paving, stormwater controls, and a phytoremediation barrier on the north and west sides of the site, will be installed to minimize contaminant migration in groundwater. In addition to these cleanup actions, groundwater monitoring will be required to ensure that reductions in groundwater contaminant concentrations are occurring. Institutional controls will also be required as long as cleanup levels have not been achieved.

6.1 GROUNDWATER MONITORING

Groundwater monitoring will include the quarterly sampling of all twelve monitoring wells for all groundwater indicators. Groundwater monitoring shall continue until cleanup levels are achieved. In addition, dissolved oxygen will be measured on at least a quarterly basis to help determine the effectiveness of the oxygen-releasing compound. If any wells need to be removed to complete the cleanup action, or if any wells are determined to be compromised due to the cleanup action, then they shall not be sampled and may be replaced if necessary.

6.2 INSTITUTIONAL CONTROLS

Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or result in exposure to hazardous substances at the site. Such measures are required to assure both the continued protection of human health and the environment and the integrity of the cleanup action whenever hazardous substances remain at the site as concentrations exceeding the applicable cleanup level. Institutional controls are also specifically required to protect terrestrial plants and animals based on the terrestrial ecological evaluation. Institutional controls can include both physical measures and legal and administrative mechanisms. WAC 173-340-440 provides additional information on institutional controls, and the conditions under which they may be removed.

Institutional controls are an important component of the cleanup action plan for the South Wilbur Petroleum Contamination Site. Residual contamination in groundwater will remain at the site. Both physical controls and legal and administrative mechanisms will be used to ensure the current and future residents do not come into contact with residual contamination and that the integrity of the cleanup action is maintained. Institutional controls will take the form of fences and signs at the property, and restrictive covenants placed with the deed. The restrictive covenants will limit site use with the purpose of minimizing disturbance to the asphalt paving, and will also prevent any excavation, well installation, or withdrawal of water for any purpose other than monitoring on the property.

6.3 Financial Assurances

WAC 173-340-440 states that financial assurance mechanisms shall be required at sites where the selected cleanup action includes engineered and/or institutional controls. Financial assurances are not required if a PLP can demonstrate that sufficient financial resources are available and in place to provide for long-term effectiveness of engineered and/or institutional controls required in the CAP.

6.4 Five Year Review

As long as groundwater cleanup levels have not been achieved, WAC 173-340-420 states that at sites where a cleanup action requires an institutional control, a periodic review shall be completed no less frequently than every five years after the initiation of a cleanup action. Since institutional controls will be required, five year reviews shall take place at this Site. Groundwater monitoring data shall be reviewed to continue to assess the effectiveness of the groundwater treatment and engineering controls in reducing contaminant concentration. If concentrations of contaminants in groundwater are not decreasing, then further remedial action will be considered.

7.0 REFERENCES CITED

CH2MHill, 2002, Lincoln County Remedial Investigation/Feasibility Report South Wilbur Petroleum Contamination Site